

SEQUENCE LISTING

<110> CHABRIERE, ERIC
CONTRERAS-MARTEL, CARLOS
FONTECILLA-CAMPS, JUAN

<120> NEW PHOSPHATE-BINDING PROTEIN, PHARMACEUTICAL
COMPOSITIONS CONTAINING IT AND USES THEREOF

<130> 0508-1160

<140> 10/577,658
<141> 2006-05-01

<150> PCT/FR04/002797
<151> 2004-10-29

<150> FR 03/12729
<151> 2004-10-30

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<170> PatentIn version 3.3

<210> 1
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<212> PRT
<213> Homo sapiens

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 35 40 45
 Thr Xaa Thr Thr Lys Xaa Val His Trp Ala Gly Ser Asp Ser Lys Leu
 50 55 60
 Thr Ala Xaa Xaa Leu Ala Thr Tyr Ala Ala Xaa Lys Xaa Pro Gly Trp
 65 70 75 80
 Gly Lys Leu Ile Xaa Val Pro Ser Val Ala Thr Ser Val Ala Ile Pro
 85 90 95
 Phe Arg Lys Ala Gly Xaa Asn Ala Val Asp Leu Ser Val Lys Glu Leu
 100 105 110
 Cys Gly Val Phe Ser Gly Arg Ile Ala Xaa Trp Ser Gly Ile Thr Gly
 115 120 125
 Ala Gly Arg Ser Gly Pro Ile Gln Val Val Tyr Arg Ala Glu Xaa Ser
 130 135 140
 Gly Thr Thr Glu Leu Phe Thr Arg Phe Leu Asn Ala Lys Cys Thr Thr
 145 150 155 160
 Gln Pro Gly Thr Phe Ala Val Thr Thr Val Phe Ala Asn Ser Tyr Ser
 165 170 175
 Leu Gly Leu Ser Pro Leu Ala Gly Ala Val Ala Ala Ile Gly Ser Val
 180 185 190
 Gly Val Met Ala Ala Asp Asn Asp Val Thr Thr Ala Gln Gly Arg Ile
 195 200 205
 Thr Tyr Ile Ser Pro Asp Phe Ala Ala Pro Xaa Leu Ala Gly Leu Xaa
 210 215 220

Asp Ala Thr Lys Val Ala Arg Thr Gly Lys Gly Ser Ser Ser Gly Gly
 225 230 235 240
 Gly Ala Glu Gly Lys Ser Pro Ala Ala Ala Asn Xaa Ser Ala Ala Ile
 245 250 255
 Ser Val Val Pro Leu Pro Ala Ala Ala Xaa Arg Gly Asp Pro Asn Val
 260 265 270
 Trp Thr Pro Val Phe Gly Ala Val Thr Gly Gly Gly Val Val Ala Tyr
 275 280 285
 Pro Asp Ser Gly Tyr Pro Ile Leu Gly Phe Thr Asp Leu Ile Phe Ser
 290 295 300
 Glu Cys Tyr Ala Asn Ala Thr Gln Thr Gly Gln Val Arg Asn Phe Phe
 305 310 315 320
 Thr Lys His Tyr Gly Thr Ser Ala Asn Asp Asn Ala Ala Ile Gln Ala
 325 330 335
 Asn Ala Phe Val Pro Leu Pro Ser Asn Trp Lys Ala Ala Val Arg Ala
 340 345 350
 Ser Tyr Leu Thr Ala Ser Asn Ala Leu Ser Ile Gly Asp Ser Ala Val
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 Cys Gly Gly Lys Gly Arg Pro Glu
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<210> 2
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 <213> Homo sapiens

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 Pro Asp Val Leu Thr Ala Gly Phe Ala Pro Tyr Ile Gly Val Gly Ser
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 Gly Lys Gly Lys Ile Ala Phe Leu Glu Asn Lys Tyr Asn Gln Phe Gly
 35 40 45
 Thr Asp Thr Thr Lys Asn Val His Trp Ala Gly Ser Asp Ser Lys Leu
 50 55 60
 Thr Ala Thr Glu Leu Ala Thr Tyr Ala Ala Asp Lys Glu Pro Gly Trp
 65 70 75 80
 Gly Lys Leu Ile Gln Val Pro Ser Val Ala Thr Ser Val Ala Ile Pro
 85 90 95
 Phe Arg Lys Ala Gly Ala Asn Ala Val Asp Leu Ser Val Lys Glu Leu
 100 105 110

Cys Gly Val Phe Ser Gly Arg Ile Ala Asp Trp Ser Gly Ile Thr Gly
 115 120 125
 Ala Gly Arg Ser Gly Pro Ile Gln Val Val Tyr Arg Ala Glu Ser Ser
 130 135 140
 Gly Thr Thr Glu Leu Phe Thr Arg Phe Leu Asn Ala Lys Cys Thr Thr
 145 150 155 160
 Gln Pro Gly Thr Phe Ala Val Thr Thr Val Phe Ala Asn Ser Tyr Ser
 165 170 175
 Leu Gly Leu Ser Pro Leu Ala Gly Ala Val Ala Ala Ile Gly Ser Val
 180 185 190
 Gly Val Met Ala Ala Asp Asn Asp Val Thr Thr Ala Gln Gly Arg Ile
 195 200 205
 Thr Tyr Ile Ser Pro Asp Phe Ala Ala Pro Thr Leu Ala Gly Leu Asp
 210 215 220
 Asp Ala Thr Lys Val Ala Arg Thr Gly Lys Gly Ser Ser Ser Gly Gly
 225 230 235 240
 Gly Ala Glu Gly Lys Ser Pro Ala Ala Ala Asn Val Ser Ala Ala Ile
 245 250 255
 Ser Val Val Pro Leu Pro Ala Ala Ala Asp Arg Gly Asp Pro Asn Val
 260 265 270
 Trp Thr Pro Val Phe Gly Ala Val Thr Gly Gly Gly Val Val Ala Tyr
 275 280 285
 Pro Asp Ser Gly Tyr Pro Ile Leu Gly Phe Thr Asp Leu Ile Phe Ser
 290 295 300
 Glu Cys Tyr Ala Asn Ala Thr Gln Thr Gly Gln Val Arg Asn Phe Phe
 305 310 315 320
 Thr Lys His Tyr Gly Thr Ser Ala Asn Asp Asn Ala Ala Ile Gln Ala
 325 330 335
 Asn Ala Phe Val Pro Leu Pro Ser Asn Trp Lys Ala Ala Val Arg Ala
 340 345 350
 Ser Tyr Leu Thr Ala Ser Asn Ala Leu Ser Ile Gly Asp Ser Ala Val
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 Cys Gly Gly Lys Gly Arg Pro Glu
 370 375

<210> 3

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<213> Homo sapiens

<400> 3

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 Gly Lys Gly Lys Ile Ala Phe Leu Glu Asn Ser Tyr Asn Gln Phe Gly
 35 40 45
 Thr Asn Thr Thr Lys Asp Val His Trp Ala Gly Ser Asp Ser Lys Leu
 50 55 60
 Thr Ala Ser Gln Leu Ala Thr Tyr Ala Ala Asn Lys Gln Pro Gly Trp
 65 70 75 80
 Gly Lys Leu Ile Glu Val Pro Ser Val Ala Thr Ser Val Ala Ile Pro
 85 90 95
 Phe Arg Lys Ala Gly Gly Asn Ala Val Asp Leu Ser Val Lys Glu Leu
 100 105 110
 Cys Gly Val Phe Ser Gly Arg Ile Ala Asn Trp Ser Gly Ile Thr Gly
 115 120 125
 Ala Gly Arg Ser Gly Pro Ile Gln Val Val Tyr Arg Ala Glu Val Ser
 130 135 140
 Gly Thr Thr Glu Leu Phe Thr Arg Phe Leu Asn Ala Lys Cys Thr Thr
 145 150 155 160
 Gln Pro Gly Thr Phe Ala Val Thr Thr Val Phe Ala Asn Ser Tyr Ser
 165 170 175
 Leu Gly Leu Ser Pro Leu Ala Gly Ala Val Ala Ala Ile Gly Ser Val
 180 185 190
 Gly Val Met Ala Ala Asp Asn Asp Val Thr Thr Ala Gln Gly Arg Ile
 195 200 205
 Thr Tyr Ile Ser Pro Asp Phe Ala Ala Pro Ser Leu Ala Gly Leu Asn
 210 215 220
 Asp Ala Thr Lys Val Ala Arg Thr Gly Lys Gly Ser Ser Ser Gly Gly
 225 230 235 240
 Gly Ala Glu Gly Lys Ser Pro Ala Ala Ala Asn Ser Ser Ala Ala Ile
 245 250 255
 Ser Val Val Pro Leu Pro Ala Ala Ala Asn Arg Gly Asp Pro Asn Val
 260 265 270
 Trp Thr Pro Val Phe Gly Ala Val Thr Gly Gly Gly Val Val Ala Tyr
 275 280 285
 Pro Asp Ser Gly Tyr Pro Ile Leu Gly Phe Thr Asp Leu Ile Phe Ser
 290 295 300

Glu Cys Tyr Ala Asn Ala Thr Gln Thr Gly Gln Val Arg Asn Phe Phe
 305 310 315 320
 Thr Lys His Tyr Gly Thr Ser Ala Asn Asp Asn Ala Ala Ile Gln Ala
 325 330 335
 Asn Ala Phe Val Pro Leu Pro Ser Asn Trp Lys Ala Ala Val Arg Ala
 340 345 350
 Ser Tyr Leu Thr Ala Ser Asn Ala Leu Ser Ile Gly Asp Ser Ala Val
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 Cys Gly Gly Lys Gly Arg Pro Glu
 370 375

<210> 4
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 <213> Homo sapiens

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 Glu Val Gln Pro Val Glu Leu Pro Asn Cys Asn Leu Val Lys Gly Ile
 35 40 45
 Glu Thr Gly Ser Glu Asp Met Glu Ile Leu Pro Asn Gly Leu Ala Phe
 50 55 60
 Ile Ser Ser Gly Leu Lys Tyr Pro Gly Ile Lys Ser Phe Asn Pro Asn
 65 70 75 80
 Ser Pro Gly Lys Ile Leu Leu Met Asp Leu Asn Glu Glu Asp Pro Thr
 85 90 95
 Val Leu Glu Leu Gly Ile Thr Gly Ser Lys Phe Asp Val Ser Ser Phe
 100 105 110
 Asn Pro His Gly Ile Ser Thr Phe Thr Asp Glu Asp Asn Ala Met Tyr
 115 120 125
 Leu Leu Val Val Asn His Pro Asp Ala Lys Ser Thr Val Glu Leu Phe
 130 135 140
 Lys Phe Gln Glu Glu Glu Lys Ser Leu Leu His Leu Lys Thr Ile Arg
 145 150 155 160
 His Lys Leu Leu Pro Asn Leu Asn Asp Ile Val Ala Val Gly Pro Glu
 165 170 175
 His Phe Tyr Gly Thr Asn Asp His Tyr Phe Leu Asp Pro Tyr Leu Gln
 180 185 190

Ser Trp Glu Met Tyr Leu Gly Leu Ala Trp Ser Tyr Val Val Tyr Tyr
 195 200 205
 Ser Pro Ser Glu Val Arg Val Val Ala Glu Gly Phe Asp Phe Ala Asn
 210 215 220
 Gly Ile Asn Ile Ser Pro Asp Gly Lys Tyr Val Tyr Ile Ala Glu Leu
 225 230 235 240
 Leu Ala His Lys Ile His Val Tyr Glu Lys His Ala Asn Trp Thr Leu
 245 250 255
 Thr Pro Leu Lys Ser Leu Asp Phe Asn Thr Leu Val Asp Asn Ile Ser
 260 265 270
 Val Asp Pro Glu Thr Gly Asp Leu Trp Val Gly Cys His Pro Asn Gly
 275 280 285
 Met Lys Ile Phe Phe Tyr Asp Ser Glu Asn Pro Pro Ala Ser Glu Val
 290 295 300
 Leu Arg Ile Gln Asn Ile Leu Thr Glu Glu Pro Lys Val Thr Gln Val
 305 310 315 320
 Tyr Ala Glu Asn Gly Thr Val Leu Gln Gly Ser Thr Val Ala Ser Val
 325 330 335
 Tyr Lys Gly Lys Leu Leu Ile Gly Thr Val Phe His Lys Ala Leu Tyr
 340 345 350
 Cys Glu Leu
 355

<210> 5
 <211> 354
 <212> PRT
 <213> Homo sapiens

<400> 5
 Met Gly Ala Trp Val Gly Cys Gly Leu Ala Gly Asp Arg Ala Gly Phe
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 Leu Gly Glu Arg Leu Leu Ala Leu Arg Asn Arg Leu Lys Ala Ser Arg
 20 25 30
 Glu Val Glu Ser Val Asp Leu Pro His Cys His Leu Ile Lys Gly Ile
 35 40 45
 Glu Ala Gly Ser Glu Asp Ile Asp Ile Leu Pro Asn Gly Leu Ala Phe
 50 55 60
 Phe Ser Val Gly Leu Lys Phe Pro Gly Leu His Ser Phe Ala Pro Asp
 65 70 75 80
 Lys Pro Gly Gly Ile Leu Met Met Asp Leu Lys Glu Glu Lys Pro Arg
 85 90 95

Ala Arg Glu Leu Arg Ile Ser Arg Gly Phe Asp Leu Ala Ser Phe Asn
 100 105 110
 Pro His Gly Ile Ser Thr Phe Ile Asp Asn Asp Asp Thr Val Tyr Leu
 115 120 125
 Phe Val Val Asn His Pro Glu Phe Lys Asn Thr Val Glu Ile Phe Lys
 130 135 140
 Phe Glu Glu Ala Glu Asn Ser Leu Leu His Leu Lys Thr Val Lys His
 145 150 155 160
 Glu Leu Leu Pro Ser Val Asn Asp Ile Thr Ala Val Gly Pro Ala His
 165 170 175
 Phe Tyr Ala Thr Asn Asp His Tyr Phe Ser Asp Pro Phe Leu Lys Tyr
 180 185 190
 Leu Glu Thr Tyr Leu Asn Leu His Trp Ala Asn Val Val Tyr Tyr Ser
 195 200 205
 Pro Asn Glu Val Lys Val Val Ala Glu Gly Phe Asp Ser Ala Asn Gly
 210 215 220
 Ile Asn Ile Ser Pro Asp Asp Lys Tyr Ile Tyr Val Ala Asp Ile Leu
 225 230 235 240
 Ala His Glu Ile His Val Leu Glu Lys His Thr Asn Met Asn Leu Thr
 245 250 255
 Gln Leu Lys Val Leu Glu Leu Asp Thr Leu Val Asp Asn Leu Ser Ile
 260 265 270
 Asp Pro Ser Ser Gly Asp Ile Trp Val Gly Cys His Pro Asn Gly Gln
 275 280 285
 Lys Leu Phe Val Tyr Asp Pro Asn Asn Pro Pro Ser Ser Glu Val Leu
 290 295 300
 Arg Ile Gln Asn Ile Leu Cys Glu Lys Pro Thr Val Thr Thr Val Tyr
 305 310 315 320
 Ala Asn Asn Gly Ser Val Leu Gln Gly Ser Ser Val Ala Ser Val Tyr
 325 330 335
 Asp Gly Lys Leu Leu Ile Gly Thr Leu Tyr His Arg Ala Leu Tyr Cys
 340 345 350
 Glu Leu

<210> 6

<211> 354

<212> PRT

<213> Homo sapiens

<400> 6

Met Gly Lys Leu Val Ala Leu Val Leu Leu Gly Val Gly Leu Ser Leu
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 20 25 30
 Glu Val Glu Pro Val Glu Pro Glu Asn Cys His Leu Ile Glu Glu Leu
 35 40 45
 Glu Ser Gly Ser Glu Asp Ile Asp Ile Leu Pro Ser Gly Leu Ala Phe
 50 55 60
 Ile Ser Ser Gly Leu Lys Tyr Pro Gly Met Pro Asn Phe Ala Pro Asp
 65 70 75 80
 Glu Pro Gly Lys Ile Phe Leu Met Asp Leu Asn Glu Gln Asn Pro Arg
 85 90 95
 Ala Gln Ala Leu Glu Ile Ser Gly Gly Phe Asp Lys Glu Leu Phe Asn
 100 105 110
 Pro His Gly Ile Ser Ile Phe Ile Asp Lys Asp Asn Thr Val Tyr Leu
 115 120 125
 Tyr Val Val Asn His Pro His Met Lys Ser Thr Val Glu Ile Phe Lys
 130 135 140
 Phe Glu Glu Gln Gln Arg Ser Leu Val Tyr Leu Lys Thr Ile Lys His
 145 150 155 160
 Glu Leu Leu Lys Ser Val Asn Asp Ile Val Val Leu Gly Pro Glu Gln
 165 170 175
 Phe Tyr Ala Thr Arg Asp His Tyr Phe Thr Asn Ser Leu Leu Ser Phe
 180 185 190
 Phe Glu Met Ile Leu Asp Leu Arg Trp Thr Tyr Val Leu Phe Tyr Ser
 195 200 205
 Pro Arg Glu Val Lys Val Val Ala Lys Gly Phe Cys Ser Ala Asn Gly
 210 215 220
 Ile Thr Val Ser Ala Asp Gln Lys Tyr Val Tyr Val Ala Asp Val Ala
 225 230 235 240
 Ala Lys Asn Ile His Ile Met Glu Lys His Asp Asn Trp Asp Leu Thr
 245 250 255
 Gln Leu Lys Val Ile Gln Leu Gly Thr Leu Val Asp Asn Leu Thr Val
 260 265 270
 Asp Pro Ala Thr Gly Asp Ile Leu Ala Gly Cys His Pro Asn Pro Met
 275 280 285
 Lys Leu Leu Asn Tyr Asn Pro Glu Asp Pro Pro Gly Ser Glu Val Leu
 290 295 300

Arg Ile Gln Asn Val Leu Ser Glu Lys Pro Arg Val Ser Thr Val Tyr
305 310 315 320

Ala Asn Asn Gly Ser Val Leu Gln Gly Thr Ser Val Ala Ser Val Tyr
325 330 335

His Gly Lys Ile Leu Ile Gly Thr Val Phe His Lys Thr Leu Tyr Cys
340 345 350

Glu Leu

<210> 7

<211> 359

<212> PRT

<213> *Oryctolagus cuniculus*

<400> 7

Met Ala Lys Leu Thr Ala Leu Thr Leu Leu Gly Leu Gly Leu Ala Leu
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Phe Asp Gly Gln Lys Ser Ser Phe Gln Thr Arg Phe Asn Val His Arg
20 25 30

Glu Val Thr Pro Val Glu Leu Pro Asn Cys Asn Leu Val Lys Gly Ile
35 40 45

Asp Asn Gly Ser Glu Asp Leu Glu Ile Leu Pro Asn Gly Leu Ala Phe
50 55 60

Ile Ser Ala Gly Leu Lys Tyr Pro Gly Ile Met Ser Phe Asp Pro Asp
65 70 75 80

Lys Pro Gly Lys Ile Leu Leu Met Asp Leu Asn Glu Lys Asp Pro Val
85 90 95

Val Leu Glu Leu Ser Ile Thr Gly Ser Thr Phe Asp Leu Ser Ser Phe
100 105 110

Asn Pro His Gly Ile Ser Thr Phe Thr Asp Glu Asp Asn Ile Val Tyr
115 120 125

Leu Met Val Val Asn His Pro Asp Ser Lys Ser Thr Val Glu Leu Phe
130 135 140

Lys Phe Gln Glu Lys Glu Lys Ser Leu Leu His Leu Lys Thr Ile Arg
145 150 155 160

His Lys Leu Leu Pro Ser Val Asn Asp Ile Val Ala Val Gly Pro Glu
165 170 175

His Phe Tyr Ala Thr Asn Asp His Tyr Phe Ile Asp Pro Tyr Leu Lys
180 185 190

Ser Trp Glu Met His Leu Gly Leu Ala Trp Ser Phe Val Thr Tyr Tyr
195 200 205

Ser Pro Asn Asp Val Arg Val Val Ala Glu Gly Phe Asp Phe Ala Asn
 210 215 220
 Gly Ile Asn Ile Ser Pro Asp Gly Lys Tyr Val Tyr Ile Ala Glu Leu
 225 230 235 240
 Leu Ala His Lys Ile His Val Tyr Glu Lys His Ala Asn Trp Thr Leu
 245 250 255
 Thr Pro Leu Lys Ser Leu Asp Phe Asn Thr Leu Val Asp Asn Ile Ser
 260 265 270
 Val Asp Pro Val Thr Gly Asp Leu Trp Val Gly Cys His Pro Asn Gly
 275 280 285
 Met Arg Ile Phe Tyr Tyr Asp Pro Lys Asn Pro Pro Ala Ser Glu Val
 290 295 300
 Leu Arg Ile Gln Asp Ile Leu Ser Lys Glu Pro Lys Val Thr Val Ala
 305 310 315 320
 Tyr Ala Glu Asn Gly Thr Val Leu Gln Gly Ser Thr Val Ala Ala Val
 325 330 335
 Tyr Lys Gly Lys Met Leu Val Gly Thr Val Phe His Lys Ala Leu Tyr
 340 345 350
 Cys Glu Leu Ser Gln Ala Asn
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<210> 8
 <211> 355
 <212> PRT
 <213> Rattus rattus

<400> 8
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 20 25 30
 Glu Val Thr Pro Val Asp Leu Pro Asn Cys Thr Leu Val Lys Gly Ile
 35 40 45
 Glu Ala Gly Ala Glu Asp Leu Glu Ile Leu Pro Asn Gly Leu Thr Phe
 50 55 60
 Phe Ser Thr Phe Leu Lys Tyr Pro Gly Ile Lys Ser Phe Asp Pro Ser
 65 70 75 80
 Lys Pro Gly Lys Ile Leu Leu Met Asp Leu Asn Glu Lys Glu Pro Ala
 85 90 95
 Val Ser Glu Leu Ala Ile Met Gly Asn Thr Leu Asp Met Ser Ser Phe
 100 105 110

Asn Pro His Gly Ile Ser Thr Phe Ile Asp Glu Asp Asn Thr Val Tyr
 115 120 125
 Leu Leu Val Val Ser His Pro Asp Ser Ser Ser Thr Val Glu Val Phe
 130 135 140
 Lys Phe Gln Glu Glu Glu Arg Ser Leu Leu His Leu Lys Thr Ile Thr
 145 150 155 160
 His Glu Leu Leu Pro Ser Ile Asn Asp Ile Ala Ala Val Gly Pro Glu
 165 170 175
 Ser Phe Tyr Ala Thr Asn Asp His Tyr Phe Ala Asp Pro Tyr Leu Arg
 180 185 190
 Ser Trp Glu Met Tyr Leu Gly Leu Ser Trp Ser Asn Val Val Tyr Tyr
 195 200 205
 Ser Pro Asp Lys Val Arg Val Val Ala Asp Gly Phe Asp Phe Ala Asn
 210 215 220
 Gly Ile Gly Ile Ser Leu Asp Gly Lys Tyr Val Tyr Ile Ala Glu Leu
 225 230 235 240
 Leu Ala His Lys Ile His Val Tyr Glu Lys His Ala Asn Trp Thr Leu
 245 250 255
 Thr Pro Leu Lys Val Leu Ser Phe Asp Thr Leu Val Asp Asn Ile Ser
 260 265 270
 Val Asp Pro Val Thr Gly Asp Leu Trp Val Gly Cys His Pro Asn Gly
 275 280 285
 Met Arg Ile Phe Phe Tyr Asp Ser Glu Asn Pro Pro Gly Ser Glu Val
 290 295 300
 Leu Arg Ile Gln Ser Ile Leu Ser Glu Asp Pro Lys Val Thr Val Val
 305 310 315 320
 Tyr Ala Glu Asn Gly Thr Val Leu Gln Gly Thr Thr Val Ala Ala Val
 325 330 335
 Tyr Lys Gly Lys Leu Leu Ile Gly Thr Val Phe His Arg Ala Leu Cys
 340 345 350
 Cys Tyr Leu
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<210> 9
 <211> 355
 <212> PRT
 <213> Mus musculus

<400> 9
 Met Ala Lys Leu Leu Ala Leu Thr Leu Val Gly Leu Val Leu Ala Leu
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Glu	Val	Thr	Pro	Val	Glu	Leu	Pro	Asn	Cys	Asn	Leu	Val	Lys	Gly	Ile		
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Glu	Thr	Gly	Ala	Glu	Asp	Leu	Glu	Ile	Leu	Pro	Asn	Gly	Leu	Thr	Phe		
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Phe	Ser	Thr	Gly	Leu	Lys	Tyr	Pro	Gly	Ile	Lys	Ser	Phe	Asp	Pro	Ser		
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Lys	Pro	Gly	Lys	Ile	Leu	Leu	Met	Asp	Leu	Asn	Lys	Lys	Glu	Pro	Ala		
			85						90					95			
Val	Ser	Glu	Leu	Glu	Ile	Ile	Gly	Asn	Thr	Leu	Asp	Ile	Ser	Ser	Phe		
			100					105						110			
Asn	Pro	His	Gly	Ile	Ser	Thr	Phe	Thr	Asp	Glu	Asp	Asn	Thr	Val	Tyr		
		115					120					125					
Leu	Leu	Val	Val	Asn	His	Pro	Asp	Ser	Ser	Ser	Thr	Val	Glu	Val	Phe		
	130					135					140						
Lys	Phe	Gln	Glu	Glu	Glu	Arg	Ser	Leu	Leu	His	Leu	Lys	Thr	Ile	Thr		
145					150					155					160		
His	Glu	Leu	Leu	Pro	Ser	Ile	Asn	Asp	Ile	Ala	Ala	Ile	Gly	Pro	Glu		
				165					170					175			
Ser	Phe	Tyr	Ala	Thr	Asn	Asp	His	Tyr	Phe	Ala	Asp	Pro	Tyr	Leu	Arg		
		180						185					190				
Ser	Trp	Glu	Met	Tyr	Leu	Gly	Leu	Ser	Trp	Ser	Asn	Val	Val	Tyr	Tyr		
	195						200					205					
Ser	Pro	Asp	Lys	Val	Gln	Val	Val	Ala	Glu	Gly	Phe	Asp	Phe	Ala	Asn		
	210					215					220						
Gly	Ile	Gly	Ile	Ser	Leu	Asp	Gly	Lys	Tyr	Val	Tyr	Ile	Ala	Glu	Leu		
225					230					235					240		
Leu	Ala	His	Lys	Ile	His	Val	Tyr	Glu	Lys	His	Ala	Asn	Trp	Thr	Leu		
			245						250					255			
Thr	Pro	Leu	Lys	Val	Leu	Asn	Phe	Asp	Thr	Leu	Val	Asp	Asn	Ile	Ser		
		260						265					270				
Val	Asp	Pro	Val	Thr	Gly	Asp	Leu	Trp	Val	Gly	Cys	His	Pro	Asn	Gly		
	275						280					285					
Met	Arg	Ile	Phe	Phe	Tyr	Asp	Ala	Glu	Asn	Pro	Pro	Gly	Ser	Glu	Val		
	290					295					300						
Leu	Arg	Ile	Gln	Asn	Ile	Leu	Ser	Glu	Asp	Pro	Lys	Ile	Thr	Val	Val		
305					310					315					320		

Tyr Ala Glu Asn Gly Thr Val Leu Gln Gly Thr Thr Val Ala Ser Val
325 330 335

Tyr Lys Gly Lys Leu Leu Ile Gly Thr Val Phe His Lys Ala Leu Tyr
340 345 350

Cys Asp Leu
355

$\langle 210 \rangle$ 10

<211> 354

<212> PRT

<213> Mus musculus

<400> 10

Met Gly Arg Met Val Ala Leu Gly Phe Ala Gly His Arg Val Ala Leu
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Leu Gly Glu Arg Phe Leu Ala Leu Ser Ser Arg Leu Lys Gly Ser Arg
20 25 30

Glu Val Glu Ser Val Asp Leu Pro Asn Cys His Leu Ile Lys Gly Ile
35 40 45

Glu Thr Gly Ala Glu Asp Ile Asp Ile Leu Pro Asn Gly Leu Ala Phe
50 55 60

Phe Ser Val Gly Leu Lys Phe Pro Gly Leu His Ser Phe Ala Pro Asp
65 70 75 80

Lys Pro Gly Gly Ile Leu Met Met Asp Leu Asp Glu Arg Pro Pro Ser
85 90 95

Leu Glu Glu Leu Arg Val Ser Trp Gly Phe Asp Leu Ala Ser Phe Asn
100 105 110

Pro His Gly Ile Ser Thr Phe Ile Asp Asp Asp Asp Thr Val Tyr Leu
115 120 125

Phe Val Val Asn His Pro Gln Phe Ser Asn Thr Val Glu Ile Phe Lys
130 135 140

Phe Gln Glu Ala Glu Asn Ser Leu Leu His Leu Lys Thr Ile Lys His
145 150 155 160

Glu Leu Leu Pro Ser Val Asn Asp Ile Ile Ala Val Gly Pro Ala His
165 170 175

Phe Tyr Ala Thr Asn Asp His Tyr Phe Ser Asp Pro Phe Leu Lys Tyr
180 185 190

Leu Glu Thr Tyr Leu Asn Leu His Trp Ala Asn Val Val Tyr Tyr Ser
195 200 205

Pro Glu Glu Val Lys Leu Val Ala Glu Gly Phe Asp Ser Ala Asn Gly
210 215 220

Ile Asn Ile Ser Pro Asp Lys Lys Tyr Val Tyr Val Ala Asp Ile Leu
 225 230 235 240
 Ala His Glu Ile His Val Leu Glu Lys Gln Pro Asn Met Asn Leu Thr
 245 250 255
 Gln Leu Lys Val Leu Gln Leu Gly Thr Leu Val Asp Asn Leu Ser Ile
 260 265 270
 Asp Pro Ser Ser Gly Asp Ile Trp Val Gly Cys His Pro Asn Gly Gln
 275 280 285
 Arg Leu Phe Val Tyr His Pro Asn His Pro Pro Thr Ser Glu Val Leu
 290 295 300
 Arg Ile Gln Asn Ile Leu Ser Glu Lys Pro Ser Val Thr Thr Val Tyr
 305 310 315 320
 Ile Asn Asn Gly Ser Val Leu Gln Gly Ser Ser Val Ala Thr Ile Tyr
 325 330 335
 Asp Arg Lys Leu Leu Val Gly Thr Leu Tyr Gln Lys Ala Leu Tyr Cys
 340 345 350
 Glu Leu

<210> 11
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 <212> PRT
 <213> Mus musculus

<400> 11
 Met Gly Lys Leu Val Ala Leu Thr Leu Leu Gly Ala Cys Leu Ala Leu
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 Ile Gly Glu Arg Leu Leu Asn Phe Arg Glu Arg Val Ser Thr Thr Arg
 20 25 30
 Glu Ile Lys Ala Thr Glu Pro Gln Asn Cys His Leu Ile Glu Gly Leu
 35 40 45
 Glu Asn Gly Ser Glu Asp Ile Asp Ile Leu Pro Ser Gly Leu Ala Phe
 50 55 60
 Ile Ser Thr Gly Leu Lys Tyr Pro Gly Met Pro Ala Phe Ala Pro Asp
 65 70 75 80
 Lys Pro Gly Arg Ile Phe Leu Met Asp Leu Asn Glu Gln Asn Pro Glu
 85 90 95
 Ala Gln Ala Leu Glu Ile Ser Gly Gly Leu Asp Gln Glu Ser Leu Asn
 100 105 110
 Pro His Gly Ile Ser Thr Phe Ile Asp Lys Asp Asn Thr Ala Tyr Leu
 115 120 125

Tyr Val Val Asn His Pro Asn Met Asp Ser Thr Val Glu Ile Phe Lys
 130 135 140
 Phe Glu Glu Gln Gln Arg Ser Leu Ile His Leu Lys Thr Leu Lys His
 145 150 155 160
 Glu Leu Leu Lys Ser Val Asn Asp Ile Val Val Leu Gly Pro Glu Gln
 165 170 175
 Phe Tyr Ala Thr Arg Asp His Tyr Phe Thr Ser Tyr Phe Leu Val Leu
 180 185 190
 Leu Glu Met Ile Leu Asp Pro His Trp Thr Ser Val Val Phe Tyr Ser
 195 200 205
 Pro Lys Glu Val Lys Val Val Ala Gln Gly Phe Ser Ser Ala Asn Gly
 210 215 220
 Ile Thr Val Ser Leu Asp Gln Lys Phe Val Tyr Val Ala Asp Val Thr
 225 230 235 240
 Ala Lys Asn Ile His Ile Met Lys Lys His Asp Asn Trp Asp Leu Thr
 245 250 255
 Pro Val Lys Val Ile Gln Leu Gly Thr Leu Val Asp Asn Leu Thr Val
 260 265 270
 Asp Pro Ala Thr Gly Asp Ile Leu Ala Gly Cys His Pro Asn Pro Met
 275 280 285
 Lys Leu Leu Ile Tyr Asn Pro Glu Asp Pro Pro Gly Ser Glu Val Leu
 290 295 300
 Arg Ile Gln Asp Ser Leu Ser Asp Lys Pro Arg Val Ser Thr Leu Tyr
 305 310 315 320
 Ala Asn Asn Gly Ser Val Leu Gln Gly Ser Thr Val Ala Ser Val Tyr
 325 330 335
 His Lys Arg Met Leu Ile Gly Thr Ile Phe His Lys Ala Leu Tyr Cys
 340 345 350
 Asp Leu